

on June 18, and again on July 11 and 29. On July 15 the male, without a tail and obviously molting was taken in our traps for the first time that season. If a second nest existed it was never found. On May 12, 1934, 9M33 returned and with a new mate nested again on his 1933 territory, building a nest thirty feet south of the former site. During incubation the nest was destroyed, probably by a cat. The birds were not found again until the male repeated in our traps on August 10. This bird was not constant to his mate but was constant to territory.

In the nine nestings mentioned above constancy is shown by Cat-birds in varying degrees to mates and to territories. Of the three remaining nests in which birds were recognizable by colored bands none of them returned or during a single season showed any constancy.

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FOREST EDGE BIRDS AND EXPOSURES OF THEIR HABITATS

BY J. RICHARD CARPENTER

In studying the bird population of forest edge communities of University and Brownfield woods near Urbana, Champaign County, Illinois, during the winter and spring of 1932-33 it was found that there was a marked selection by the majority of birds in regard to the exposure-direction of the habitat selected. The prevailing winds of the region during that period of the year are from the west and southwest and it was apparent that the birds selected exposures on the "lee" sides of the woods in both of the tracts studied.

The dominant vegetation of the thickets of the forest edges studied was redbud (*Cercis canadensis*), flowering dogwood (*Cornus florida*), young elms (*Ulmus americana*), spicebush (*Benzoin aestivale*), button bush (*Cephalanthus occidentalis*), several species of ash (*Fraxinus* spp.), and haw (*Crataegus* spp.). For a further description of the tracts of woodland studied see McDougall '22, Smith '28, and Blake '31.

Data regarding the bird population were obtained by cruising through the forest edge, recording all of the birds in a strip approximately twenty feet wide, which included the major portion of the thicket at the edges of the woods. In both cases the route of observations was about one mile long and since in both cases also the woods were slightly longer than broad, the north and south exposure observations are over a slightly smaller area than are the east and west observations.

The accompanying table lists the birds observed, with notations following the individual figures as to where the majority of that given

	N.12b	N.20b	D.10b	J.8b	J.21b	F.25b	F.26u	M.4b	M.5b	M.19u	M.27b	M.27u	A.2u	A.9u	A.23u	A.30u
Flicker	1e					1e				1s				2s	8	
Yellow-bellied Sapsucker	1e					2				1w	2n			1n		
Red-bellied Woodpecker	1n			1e	2	2	2	13e	1w	2	4c	1e	6n	2e	5e	
Downy Woodpecker	3n	1n	5	7	9c	2e		28e	1s		3	4e	4n	7e	1w	3
Tufted Titmouse	5e	12c	4		11			1e						1e		
Hairy Woodpecker		1n	1s	1s	3e	3c	3	9e	1e		2e		1e	2e	6c	3e
Cardinal		8c	5e		5e	15c	5	5e	25e	60s	1n	85n	17n		4n	2n
Chickadee		1e	2e	4s	2			3w	1w		1s		1n	1w		
Junco		4e			4e								2n			
Brown Creeper		1n	2e		2c											
Ruby-crowned Kinglet		2n	2e		2e											
Blue Jay			1w		4n		1e								1w	
Red-breasted Nuthatch						2e										
Bluebird						7c	9e	80n	1s	7s	5n			1e	4c	
Robin							28c			3n				1w	4c	
Miscellaneous Sparrows															1w	
Field Sparrow								127e	1e						1s	
Towhee										1s	2e	4s	1n	4s		3
Bronzed Grackle										5s	21n		1e	2	3	9e
Wood Thrushes															5s	3s
Tree Sparrow														2	2w	2
Brown Thrasher														1e	1w	8c
Miscellaneous Warblers															4w	1e
White-eyed Vireo																60e
White-throated Sparrow																3e
Catbird										4w	9	7s		10n		3e
Miscellaneous and Indet.						12n										
Total Individuals	11	30	22	13	44	44	51	266	30	84	50	97	39	36	49	104
Number Species	5	8	8	4	10	8	7	8	6	9	10	4	11	14	15	16
North Exposure	4	17		4	9	23	1	50		5	30	84	28	11	6	11
East Exposure	7	7	15	1	25	6	11	197	26		7	1	9	17	13	80
West Exposure			6		10		21	19	2	6			1	2	19	8
South Exposure		6	1	8	15	15	18		2	73	13	12	1	6	8	4

species for that date occurred. The statistical summary at the conclusion of the table gives the total number of birds in each exposure for that woods that day.

In the winter and early spring a great number of birds occupy one preferred exposure to the marked exclusion of those habitats which are more rigorous; the Brown Creeper, Titmouse, Chickadee, and Bluejay were most noticeable among these. In the late spring the total population is spread over more exposures with much less noticeable selection; these birds, save the Junco, were apparently consistent in their lack of discrimination of habitat. The Junco individuals which spend the late spring and summer months in the region showed a marked selection for the northern exposures; this was not evident for the winter residents of the species. The east exposure (the "lee" side with reference to the prevailing winds) had by far the greatest bird population in all seasons observed. Insect population studies conducted during the same period gave no similar habitat selection with respect to exposure.

It is interesting to note that while the average number of species observed was eight during the winter and early spring (the hiemal and prevernal periods), the late spring (vernal) practically doubled the number of species observed each day. Seasonal progression and the arrival of species is also evident.

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TABLE I

(See preceding page)

SELECTION OF HABITATS AND EXPOSURES BY FOREST EDGE BIRDS November 12, 1932-April 30, 1933

EXPLANATION OF SYMBOLS USED IN TABLE

- b Observation made at the Brownfield woods.
 u Observation made at the University woods.
 n Individuals found exclusively in northern exposures.
 e, w, s Individuals exclusive to respective exposure: east, west, or south.
 n Most of the individuals in north exposures, but not exclusively so.
 e, w, s As in *n* for the respective exposures.
 c Cosmopolitan: individuals occurring in three or more exposures.
 No initial: in two habitats, more or less evenly distributed and showing no apparent selection.